

# Chemistry Department Seminar

## Environmental Transformation and Toxicological Impacts of Metformin Hydrochloride



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**New Mexico Institute of Mining & Technology**

**Host: Dr. Gayan Rubasinghege, PhD**

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**2:00 pm MST**

**Lopez 106**

### **Abstract**

*Metformin hydrochloride, a cornerstone treatment for type 2 diabetes, has garnered considerable interest beyond its glucose-lowering capabilities, particularly regarding its degradation products and their effects on human health. In our recent work, we delved into the degradation pathways of metformin hydrochloride across diverse environmental scenarios, revealing the genesis of various degradation byproducts. Utilizing cell viability assays, our study rigorously evaluates the toxicological impact of these compounds on human cell lines, illuminating their potential hazards. Our research underscores the critical need to comprehend the environmental fate of metformin hydrochloride and its implications for cellular health. Join our seminar as we unravel the complex dynamics between metformin degradation and human health implications, providing pivotal insights for advancing pharmaceutical research and enhancing clinical outcomes.*

### **Bio**

*Rifat Khan holds a Bachelor of Pharmacy from East West University, Bangladesh, and a Master of Pharmacy from State University of Bangladesh. During his academic journey, he focused on exploring the therapeutic potential of medicinal plants, conducting diverse in vitro and in vivo experiments. In his PhD studies, he is conducting research under the mentorship of Dr. Gayan Rubasinghege at the Department of Chemistry, New Mexico Tech. His doctoral research is centered on environmental toxicology, aiming to investigate the impacts of emerging contaminants on ecosystems and human health.*